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APPLICATION FOR UNITED STATES PATENT

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Title: CHEEK AND LIP RETRACTOR FOR DENTISTRY
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SPECIFICATION

Cheek and Lip Retractor for Dentistry

Field of the Invention

5 The present invention relates to a cheek and lip retractor for dentistry, intended for retracting the soft tissue in the area of the operating field during treatments in the oral cavity and more particularly on the teeth.

10 Prior Art

A large number of cheek and lip retractors are known in the art, e.g. from US-A-4,053,984, the retractor disclosed in this reference essentially consisting of a U-shaped bent
15 piece both ends of which are provided with lip shields while the cheeks are pulled out by the U's legs. Through this arrangement, in the area of the mouth corners, the lips are seized as by a rigid hook, thereby making it impossible for the operator to further stretch the mouth corner if
20 necessary. Moreover, the access to the adjacent gingival tissue is insufficient.

Still other retractors are known in the art, which also suffer from the mentioned drawbacks, and where the lip
25 tension resulting from the extension of the lips in the horizontal direction is so strong that it may be uncomfortable for the patient and painful after a time. Also, the retractors of the prior art do not offer sufficient access to the treated surfaces in the area of the
30 front teeth.

Summary of the Invention

On the background of this prior art, it is the object of the present invention to provide a cheek and lip retractor which eliminates the drawbacks described above and allows to spread the lips in such a manner as to ensure a free access to the areas to be treated, and which is so designed that even a prolonged application of the retractor is not uncomfortable or even painful for the patient.

This is accomplished by a cheek and lip retractor comprising respective cheek portions and lip portions for the upper and lower lip, said lip portions comprising a lip shield and mucosa pads which are separate and spaced apart from said lip shield, said cheek portions and lip portions being connected to each other by flexible connecting elements, and said connecting elements being disposed between said lip shield and said mucosa pad. Further developments and advantages are set forth in the dependent claims.

Brief Description of the Drawings

The invention shall be explained in more detail hereinafter with reference to an exemplary embodiment.

FIG. 1 shows a retractor according to the invention in rear view;

FIG. 2 shows the retractor of FIG. 1 in side view;

FIG. 3 shows a detail on an enlarged scale; and

FIG. 4 shows the retractor of FIG. 1 in front view.

Detailed Description of the Invention

FIG. 1 shows retractor 20 in rear view with the two lip
5 portions 1 and 2, each provided with respective lip shields
3 resp. 4 and mucosa pads 5 resp. 6, as well as the two
cheek portions 7 and 8. The lip and cheek portions are
arranged in a slightly curved plane and connected to each
other by flexible connecting elements 9, 10, 11, 12.

10

As appears in FIG. 3, the mucosa pads comprise respective
pairs of rolls 13 that may e.g. be made of silicone or of
another suitable material and that are hollow for being
slipped on flexible holders 14. It is thus possible to
15 provide rolls of different diameters to ensure an optimal
adjustment of the retractor and allow easy cleaning resp.
sterilization. The end of holder 14 comprises a thickened
portion 15 providing a secure retention of the roll.

20 As appears especially in FIG. 3, the mucosa pads and the lip
shield are separated and spaced apart from each other
perpendicularly to the plane of the connecting elements. The
connecting elements are arranged approximately centrally
between the respective mucosa pad, the mucous membrane and
25 the lip shield. The distance between the point of support
of the mucosa pad on the mucous membrane and the center line
M of the lip shield is D. This distance may range from 10 mm
to 30 mm. The lips are thus lifted off from the teeth in
such a manner that a free treatment of the teeth and of the
30 gingival tissue is possible.

The lip shield is anatomically shaped and designed to
accommodate different lip shapes, and it is furthermore

curved in such a way that it is avoided that the lip is pressed outwards.

5 The cheek portion is of a flexible construction and includes a curved surface 16 connected to the connecting elements by a flexible web 17. The cheeks are thus retracted from the teeth and from the mucous membrane, and the curved, flexible surfaces provide a high comfort.

10 The horizontal distance between the cheek portions as well as their dimensions are chosen such that they do not obstruct the area of the mouth corners, and the flexible connecting elements enable the dentist to further spread the mouth corners if required for certain operations. When
15 closing the mouth, the lip portions perform an essentially translational movement. On one hand, the flexible connecting elements assist the requirement of keeping the mouth open, whereby the retractor does not become uncomfortable even in prolonged sessions, but on the other hand, they allow
20 working with the mouth closed.

The entire retractor, except the mucosa rolls, may be made in one piece. If the retractor is intended to be reused, synthetic materials available under the designations "PEEK"
25 and "PPSU" have been found to be appropriate, or e.g. "PC" for single use.

Providing the lip portion with mucosa pads and designing the cheek portions as flexible surfaces results in a preferred
30 embodiment which offers a comfortable fit for the patient and allows an optimum treatment by the dentist.